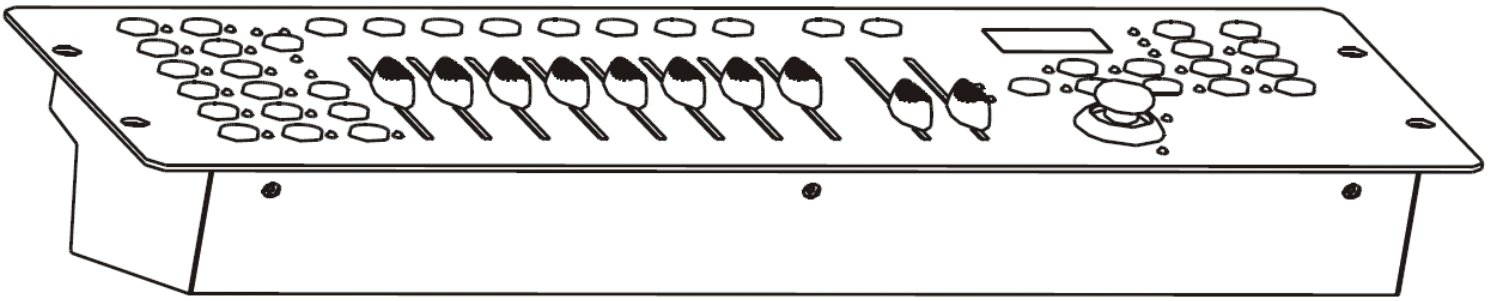
AYRA

OSO 240B MKII

192-channel DMX controller



User manual

Introduction

Thank you for purchasing this Ayra DMX controller. This unit was designed to control DMX lighting fixtures, especially intelligent lighting fixtures. The unit is capable of sending out a maximum amount of 192 DMX channels, spread over 12 fixtures with 16 channels each. The device can store up to 6 chases, which gives you the opportunity to create your own lightshows and adjust them to the music that you are playing.

Safety precautions:
- Always read the user manual, as it may contain important information about safety regulations, use of the product and maintenance.
- Keep this unit dry and do not expose it to moist environments or direct contact with water or any other fluids.
- When any fluid is spilled into the unit, disconnect it from the power supply immediately.
- Do not open this unit. There are no user serviceable parts inside. When the product does not function properly, contact your local dealer or a technician.
- Do not modify the unit, as this may void your warranty.
- Keep the unit away from any magnetic fields while functioning.
- Keep the unit away from heat sources such as open fire and heating systems
- Handle this device with care. Exposure to shocks, vibration and direct impact may cause damage and malfunction.
- This unit should be used by, or under the supervision of an adult. This unit is not suitable for children.
- Do not use the unit when the ambient temperature exceeds 45 degrees Celsius.
- When this unit will not be used for a longer period of time, disconnect it from the power supply.
- Always check your local power supply with the power requirements of this unit. When you suspect that the power outlet is not suitable for this device, do not connect it.

Box contents
1x OSO 240B MKII DMX controller
1x user manual
1x USB LED gooseneck light
1x power adapter

NOTICE:
Always check the box contents for any optical signs of damage. When in doubt, contact your local dealer and do not use the device.

If any of the above described parts is missing, contact your local dealer.

Features

This DMX controller has an output of 192 DMX channels max. These channels are spread over 12 fixtures, each with a maximum of 16 channels. This way, you are able to select and deselect connected fixtures, to change settings and/or values.

The unit is designed for intelligent DMX fixtures, such as movingheads, scanners, lighting effects and static (RGB) LED lighting which consume several DMX-channels.

The unit has the capability to store up to 240 scenes, spread over 30 banks with 8 scenes each. Each scene may contain an unlimited number of channels with certain values.

Saved scenes can be recalled to create chases. Chases consist of a certain selection of steps, carefully placed after each other in a continuous loop. This way it is possible to configure effects as movement and color-changing with your lighting fixtures. Each chase may contain up to 240 steps, composed of the stored scenes, in any order. Multiple chases can be activated at the same time, this creates opportunities to activate or de-activate groups of lighting fixtures with certain chases.

The unit is equipped with a joystick, with pan and tilt movement. The pan and tilt movement can be patched to the X and Y controls of your intelligent DMX devices, for easy programming.

Re-assignable channels give you the opportunity to combine certain DMX-channels, to control them with just one fader. This can be practical for dimmer functions, RGB color mix and strobe-functions. This way it becomes possible to combine DMX fixtures that have a different DMX-channel setup.

While running a chase, it is possible to select automatic or music controlled speed adjustment.

Manual speed adjustment is possible with the Speed and Fade time faders. The Speed fader determines the time it takes to switch from one step to another. The Fade time fader determines the time it takes from one value to change to another value. Instead of using the Speed fader, it is possible to use the Tap Sync function, by tapping this button to the beat of the music.

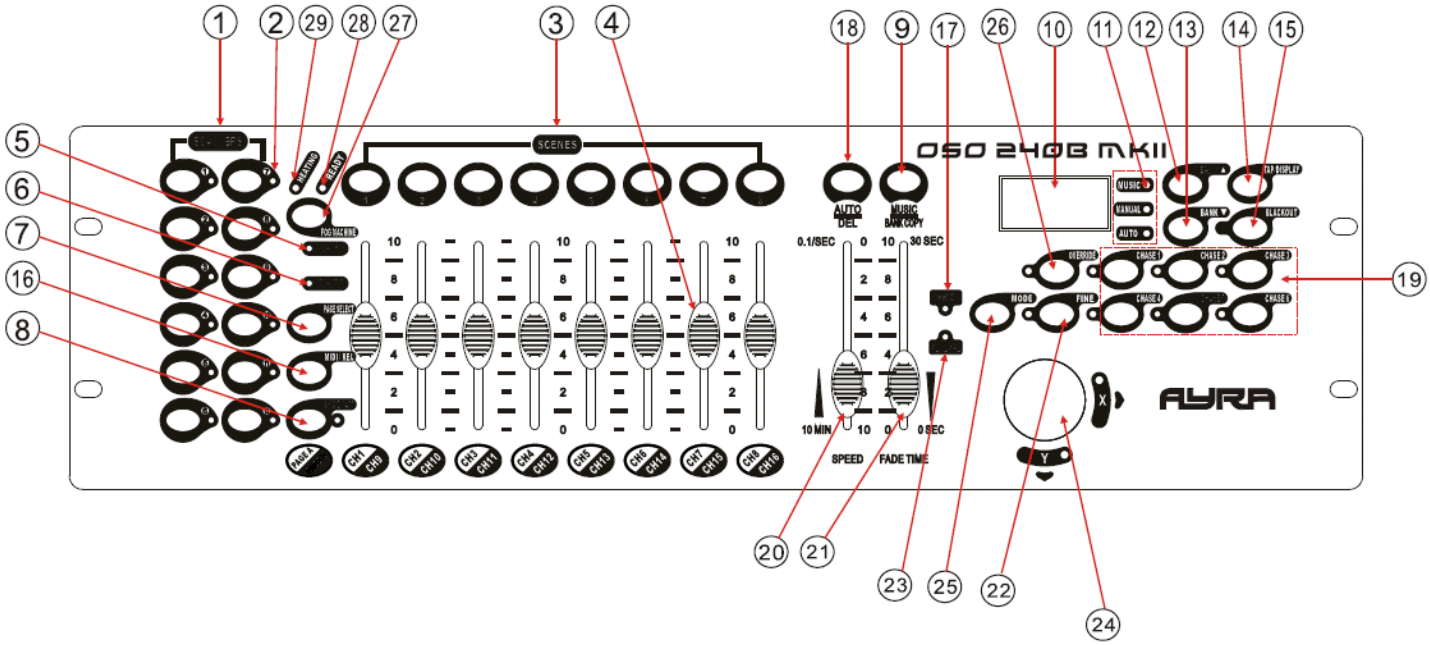
Music controlled speed adjustment is possible in two separate ways. The controller has a built-in microphone, which senses music and responds by selecting the proper speed for your chases. With every beat, the unit will change steps in a chase.

Fixtures whose values are already determined in a chase, can be adjusted on-the-fly. This might be helpful if you wish to correct a color of one or a few fixtures. Just simply select the fixtures you wish to adjust, change the values and the programmed values will be overruled.

The unit is MIDI compatible, so it is possible to connect external MIDI devices to control functions of the controller. It has a MIDI input port, which makes it possible to trigger banks and scenes using MIDI signals.

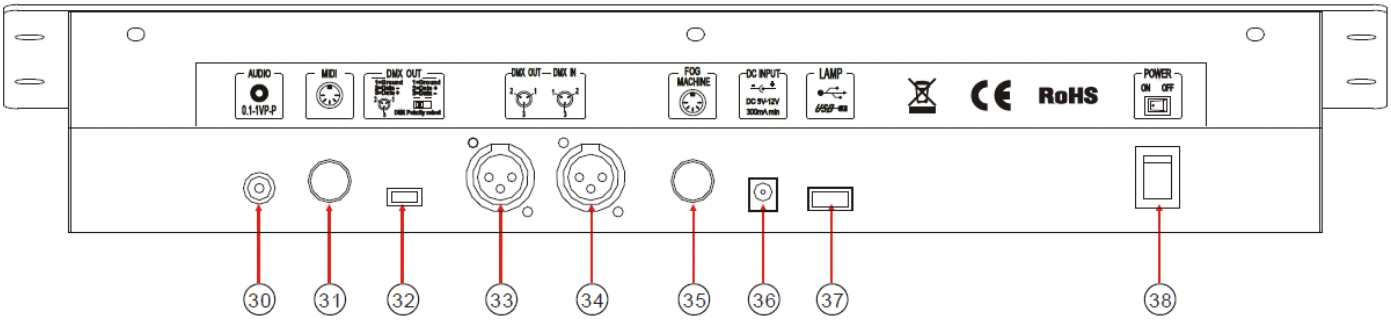
Any other functions will be explained later on in this manual.

Product overview



1. **Scanner select button:** Select the fixture you wish to operate with the faders
2. **Scanner indicator LEDs:** Indicates if a scanner is active or not
3. **Scene select buttons:** 8 scene buttons, representing storing locations for sceens
4. **Channel faders:** Sliders to adjust the DMX-values of each channel. 8 faders
5. **Page A indicator LED:** Indicates channel 1-8 on page A
6. **Page B indicator LED:** Indicates channel 9-16 on page B
7. **Page select button:** Toggle between page A and B to change channels 1-8 and 9-16
8. **Program button:** used to enter the programming mode
9. **Music/bank copy button:** Used to activate the music mode. Used to copy values and scenes while programming
10. **LCD display window:** displays values such as chase- and scenenumbers, and/or speed values and DMX values
11. **Mode indicator LEDs:** operating mode status LED (music, manual, auto)
12. **Bank up button:** Scroll up in the bank selection
13. **Bank down button:** Scroll down in the bank selection
14. **Tap display button:** tap-sync during playback, toggles DMX-values to % while programming
15. **Blackout button:** Blocks all output and sets all values to 0
16. **MIDI/Rec button:** activates external MIDI control to trigger scenes and banks
17. **Assign LED:** indicates that the controller is in Channel assign mode
18. **Auto/Del button:** used to activate the auto mode, used as delete button while programming
19. **Chase buttons:** used to activate or de-activate chase 1-6
20. **Speed fader:** adjust the hold time of a scene or step in a chase
21. **Fade time fader:** adjust the speed of valuechange between two scenes in a chase
22. **Fine button:** Activates 16-bit movement if applicable, for X and Y channels, for fine movement optimalisation
23. **Reverse LED:** indicates reverse channel function (to invert channel values, for pan and/or tilt)
24. **Pan/Tilt joystick:** Used to change the values of selected X/Y channels on one or several fixtures
25. **Mode button**
26. **Override button**

27. **Fog machine button:** Activates the fog machine **(NOTE: not all fog machines work with this function)**
28. **Fog machine ready indicator**
29. **Fog machine heating indicator**



30. **Audio input jack:** direct audio input from a line signal audio source, connected with 6.35mm jack
31. **MIDI input port:** 5-pin DIN connector for external MIDI signals
32. **DMX polarity switch:** switches the polarity of your XLR 3-pin connector (for Martin protocol)
33. **DMX output connector:** 3-pin XLR connector
34. **DMX input connector:** For File Dump data exchange only, using a 3-pin XLR connector
35. **Fog machine input:** 5-pin DIN connector for fog machines **(NOTE: not all fog machines work with this function)**
36. **DC input:** Connector for the included power supply
37. **USB lamp socket:** USB connector, to power the included LED gooseneck light. Not suitable for any kinds of data transmission!
38. **ON/OFF switch:** switches the power on or off.

Common terms

Blackout: A state where all DMX values are set to 0, causing all output to be blocked from your lighting fixtures. The functions on your controller will be still operating

Fixture: Also called scanner, a term which describes a lighting device, such as a movinghead, scanner, lighting effect or LED-projector.

DMX-512: An industry standard for digital communication between lighting controllers and lighting fixtures, used in the entertainment sector.

Programs: also called chases, a term which indicates a series of scenes or steps, put together in order, continuously looping.

Scene: A static lighting pattern, saved as a preset

Sliders: Also known as faders, in this case describing knobs which move in a vertical direction, used to determine certain values of channels

Scanner: See: fixture. Used to describe a fixture with pan and tilt functionality (movement)

MIDI: A music industry standard for data-communication between musical devices, such as keyboards. In this case used for triggering scenes and banks

Stand alone: Refers to the ability of a fixture to operate without any controlling device connected. In most cases, an automatic program or music activated show must be selected.

Fade time: Determines the time it takes for one value to change to another value in a chase

Speed: Determines the time it takes for one step in a chase, to go to another step in a chase

Shutter: A mechanical device in a lighting fixture, capable of blocking the output of a fixture while leaving the light source on

Patching: The process of assigning several DMX-channels to one fader for easy operation.

Programming and configuration

Setting up the system

Place the unit on a solid surface, or mount it in a 19 inch flightcase/rack. Connect the included DC power supply at the rear of the panel and plug it into a suitable wall outlet or power distribution box.

Plug in the DMX-cables from the controller to all your fixtures and daisy-chain every fixture you wish to connect.

Make sure that every fixture has the right DMX-address for optimal programming benefits. The device has 12 fixtures, with 16 channels each. Thus, if you wish to address every fixture to a fixture button, you need to select the following addresses:

Fixture	DMX-address	Dipswitch settings
1	1	1
2	17	1 , 5
3	33	1 , 6
4	49	1 ,5 ,6
5	65	1 , 7
6	81	1 , 5 , 7
7	97	1 , 6 , 7
8	113	1 , 5 , 6 ,7
9	129	1 , 8
10	145	1 , 5 , 8
11	161	1 , 6 , 8
12	177	1 ,5 ,6 , 8

NOTE: The last column describes the dipswitches you would have to turn on to select the right DMX address. Some fixtures require DMX dipswitch 10 to be turned ON, to activate the DMX mode.

NOTE: For DMX fixtures with a LED display for the DMX addressing, you don’t need to use the DMX dipswitch settings.

Joystick assignment

- Press and hold the Program button until the corresponding LED blinks
- Press and hold Fine & Mode buttons together (2 times) to access the Channel Assignment mode. The Assign LED will light up.
- Press a Scanner number, for the fixture you wish to apply the joystick to (pan and tilt)
- Use the Bank UP/DOWN buttons to select Pan and Tilt wheel and the Pan/Tilt LED will turn on.
- Press Tap/Display button to switch pages, if necessary.
- Press and hold MODE button, then press the Scene button to select the DMX channel you wish to apply pan and tilt for.
- Press and hold Fine and Mode buttons to exit the assignment mode.

NOTE: The joystick can be reassigned to an output on another DMX channel. Press Auto/Del and Mode buttons at the same time to delete the assignment

NOTE: You can re-assign the DMX channel to all controller fader channels

Reverse review

- Press and hold Fine & Mode buttons together to access the wheel assignment mode
- Press a Scanner button to select a scanner
- Press and hold Fine & Mode buttons (2 times) to exit the assignment mode

Joystick reverse

- Press and hold Fine & Mode buttons together to access the wheel assignment mode
- Press a Scanner button to select a scanner
- Press and hold Fine & Mode buttons to exit the assignment mode

Copy scanner

It is possible to copy the programming values of one scanner to another scanner. This way, it makes it easier to create synchronized lightshows, without having to add the separate values each time.

- Press and hold Scanner button 1
- Press Scanner button 2
- Release Scanner button 1
- Release scanner button 2
- All Scanner LED indicators will flash, indicating that the copy was successful.

Reverse channel output

It is possible to reverse certain channel values. This way, you are able to invert certain pan and tilt values, without having to invert the values manually.

- Press and hold the Program button until the LED blinks
- Press and hold Fine & Mode buttons together to access the channel assignment mode
- Press the scanner button of which you wish to invert a channel
- Use the Bank Up/Down buttons to select pan and tilt
- Press the Tap/Display button to switch pages, if needed
- Press and hold the Mode button, then press the corresponding Scene button to select the DMX channel of which you wish to invert the channel
- Press and hold the Fine & Mode buttons 2 times to exit

Fade time assign

It is possible that you want to change the Fade Time behavior of the controller. This way, you are able to only affect the pan and tilt channels of your fixtures, instead of all channels. This way, color changes, gobo changes and macro’s will move very fast and direct, while your movements will go smoother.

- Turn off the controller
- Hold the Mode and Tap Display buttons simultaneously
- Turn on the controller
- Press the Tap Display button to toggle between two modes (ALL CH / ONLY X/Y)
- Press Mode and Tap Display buttons to save the settings. All LEDs will blink to confirm the change.

Manual operation

The manual mode provides direct access to all scanners. This way, you are able to move and change attributes by using the channel faders and/or joystick.
- Press the Auto Del button repeatedly until the Manual LED is lit
- Select a Scanner button
- Move faders and/or joystick as you wish
- Select Page A (1-8) or Page B (9-16) to change values for all channels in a fixture
- Tap Display button: Change the values on the display between 0-255 (DMX) and 0-100 (%)

NOTE: all changes made in manual mode are temporary and will not be recorded.

Review a scene or chase

It is possible to load a scene or step (from a chase) to use as example for your lighting setup in live operation mode. For example, if you already have a scene with correct positioning of pan and tilt values (for example in a fan), you can recall a scene to load these values. All you have to do is apply correct gobo and color settings.

Recall a scene
- Select one of the 30 banks by using the Bank UP/DOWN buttons
- Select a scene (1-8)
- load the scene and apply changes

Reload a chase
- Press any of the 6 Chase buttons
- Press the Tap Display button to view the step number on the display
- Press the Bank UP/DOWN buttons to review all scenes in the chase

Creating a scene

A scene is a static lighting state, stored into a location for later recall. Scenes are stored in banks, up to 8 scene can be stored in a bank. So in total, there are 240 scene storing locations available.

- Press the Program button until the LED blinks
- Position Speed and Fade Time faders all the way down
- Select the Scanners you wish to include in this scene
- compose a certain look by changing channel values
- Tap the MIDI/Rec button
- choose a bank (01-30) for storage
- Tap one of the Scene buttons (1-8) to store the scene
- Repeat steps as much as necessary (select scanners – store scene)
- to exit the Program mode, hold the Program button.

NOTE: Deselect the Blackout button if it's lit.
NOTE: Access channel 9-16 on a fixture with Page A/B buttons
NOTE: There are only 8 scenes available in every bank
NOTE: All LEDs will flash as a confirmation when a scene is stored successfully. After this, the LED display will show the scene number and bank which is used now.
TIP: Press the Fine button when you are programming, so values will only increase or decrease by '1'.

SHORTCUT: [Program][Scanners][Faders/Wheels][Bank][Scene][Program]

Running a program

NOTE: A ‘Program’ in this manual is described as a series of scenes inside a bank, placed after each other in a continuous loop. It is comparable to a Chase, but has a logical order and only consists of the scenes that are stored in that bank.

- Use the Bank UP/DOWN buttons to change Program banks
- Press the Auto/Del button until the Auto LED turns on
- Adjust the Program speed with the Speed fader
- Adjust the loop rate with the Fade Time fader
- Alternitavely, you are able to tap the Tap Display button twice. The time between these two determine the speed.

Review a program

- Press and hold the Program button until the LED blinks
- Use the Bank UP/DOWN buttons to select the Program bank to review
- Press Scene buttons to review each scene individually

Editing a program bank

- Press and hold the Program button until the LED blinks
- Use the Bank UP/DOWN buttons to change Program banks
- Select the desired fixture with the Scanners button
- Adjust and change fixture values with the faders and joystick
- Press the MIDI/REC button to prepare the save
- Select the desired Scene button to save the scene to

Copy a program bank

- Press and hold the Program button until the LED blinks
- Use Bank UP/DOWN buttons to change Program banks
- Press the MIDI/REC button to prepare the copy
- Use the Bank UP/DOWN buttons to select the destination Program bank
- Press the Music Bank Copy button to execute the copy. All LEDs will blink
- All 8 scenes of the Program bank are copied to the new location.

NOTE: This will override any saved scenes in the bank you selected!

Create a chase

NOTE: A chase consists of multiple scenes, arranged in a chosen order by the programmer. Up to 240 scenes can be added to a single chase.
NOTE: A step in a chase consists of a scene, stored in the Program Banks

- Press the Program button until the LED blinks
- Press the chase (1-6) you wish to select
- Change the Bank if necessary, to locate a scene
- Select the scene you wish to insert
- Tap the MIDI/REC button to store the scene to this step
- Repeat the steps above to add additional steps (change bank – tap MIDI/REC)
- Press and hold the Program button to save the chase

Running a chase

- Press the Chase button, then press the Auto/Del button
- Adjust the Speed and Fade Time by using the corresponding faders (or use Tap Sync)

Review a chase

- Press and hold the Program button until the LED is lit
- Select the desired Chase button
- Press the Tap Display button to switch the LCD button to steps
- Review each scene/step individually by using the Bank UP/DOWN buttons

Edit a chase

Copy bank into chase

- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Select the Bank to be copied, using the Bank UP/DOWN buttons
- Press the MUSIC/BANK Copy button to prepare copy
- Press MIDI/REC to copy the bank. All LEDs will blink

Insert scene into chase

- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Press the Tap Display to switch the LCD to steps view
- Use the Bank UP/DOWN buttons to navigate steps and to locate the insert point of the new scene. The display will read the step number
- Press MIDI/REC button to prepare the insert
- Use the Bank UP/DOWN button to locate the scene
- Press the Scene button that corresponds with the scene to be inserted
- Press MIDI/REC button to insert the scene. All LEDs will blink

Delete a scene in a chase

- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Press the Tap Display button to switch the LCD display to steps
- Select the Scene/Step to be deleted by using the Bank UP/DOWN buttons
- Press Auto/Del button to delete the step/scene. All LEDs will blink

Delete a chase

- Press and hold the Program button to enter programming mode
- Press the Chase button (1-6) to be deleted
- Press and hold Auto/Del button and the respective Chase button to delete the chase. All LEDs will blink.

Delete all chases

NOTE: This action will result in the loss of all saved chases! The individual scenes and step memory will be saved.

- Turn off the controller
- Press and hold the Bank DOWN button and the Auto Del button while turning on the controller
- All LEDs will blink

Scene programming (steps)

Insert a scene

- Press and hold the Program button to enter programming mode
- Press the desired Chase button
- Press the Tap Display button to switch the LCD display to steps view
- Use the Bank UP/DOWN buttons to navigate steps and locate the insert point of the new scene. The display will read the step number
- Press the MIDI/REC button to prepare the insert
- Use the Bank UP/DOWN buttons locate the Scene
- Press the Scene button that corresponds to the scene to be inserted
- Press MIDI/REC button to insert the scene. All LEDs will blink.

NOTE: Scenes will be inserted after the selected step.

Copy a scene

- Press and hold the Program button to enter programming mode
- Select the bank that contains the scene to be copied, using the Bank UP/DOWN buttons
- Press the Scene button that corresponds to the scene to be copied
- Press the MIDI/REC button to copy the scene
- Select the destination Bank that contains the scene memory to record onto, using the Bank UP/DOWN buttons
- Press the desired Scene button to complete the copy process. All LEDs will blink

NOTE: When deleting a scene, the physical location isn't deleted, however, all 192 DMX channels will be set to 0.

Delete a scene

- Press and hold the Program button to enter the programming mode
- Select the bank that contains the scene to be deleted, using the Bank UP/DOWN buttons
- Press and hold the Auto Del button
- Press the Scene button that corresponds to the scene you want to delete. All LEDs will blink.

Delete all scenes

- Press and hold the Program button and the Bank Down button while turning off the power to the controller
- Turn the controller back on

NOTE: This process is irreversible! All scenes with data will be reset to 0!

Playback

Sound-mode playback

- Press the Music / Bank copy button until the Music LED turns on
- Select the program bank to run in sound active mode, using the Bank UP/DOWN buttons **OR** Select a Chase button (1-6) **OR** select several Chase buttons (which will loop all pressed chases in sequence
- Adjust the fade time as you wish

Auto mode playback
- Press the Auto/DEL button until the AUTO LED turns on
- if a Chase button is not pressed, the controller will automatically run a bank program
- Change Bank programs by using the Bank UP/DOWN buttons **OR** press a chase button **OR** press several chase buttons (which will loop all pressed chases in sequence
- Adjust the fade time as you wish

Run multiple chases simultaneously
- Press and hold the Auto/DEL button
- While holding down the Auto/DEL button, press each chase one at a time which you want to run simultaneously

NOTE: Do not use this function when you want to combine chases which contain values for the same channels. This can result in strange lighting behavior. Consider making separate movement and color/gobo/effect chases for optimal result.

Blackout
Press the Blackout button to cancel all DMX-output to your lighting (effectively setting all values to 0, which will turn off all light output on your DMX devices)

MIDI operation

NOTE: The controller will only respond to the commands which are sent to the correct channel. For example, the controller will not respond when its receiving channel is 4 and you are sending out signals on channel 1.

- Press and hold the MIDI/REC button
- Select the MIDI control channel (1-16) with the Bank UP/DOWN buttons
- Press and hold the MIDI/REC button
- to release MIDI control, press any other button except the Bank buttons

MIDI NOTE	FUNCTION (TURN ON/OFF)
00 to 07	Scenes 1~8 in BANK 1
08 to 15	Scenes 1~8 in BANK 2
16 to 23	Scenes 1~8 in BANK 3
24 to 31	Scenes 1~8 in BANK 4
32 to 39	Scenes 1~8 in BANK 5
40 to 47	Scenes 1~8 in BANK 6
48 to 55	Scenes 1~8 in BANK 7
56 to 63	Scenes 1~8 in BANK 8
64 to 71	Scenes 1~8 in BANK 9
72 to 79	Scenes 1~8 in BANK 10
80 to 87	Scenes 1~8 in BANK 11

MIDI NOTE	FUNCTION (TURN ON/OFF)
88 to 95	Scenes 1~8 in BANK 12
96 to 103	Scenes 1~8 in BANK 13
104 to 111	Scenes 1~8 in BANK 14
112 to 119	Scenes 1~8 in BANK 15
120	Chase 1
121	Chase 2
122	Chase 3
123	Chase 4
124	Chase 5
125	Chase 6
126	BLACKOUT

Data transfer (file dump)

NOTE: This function will transfer all stored data from one controller to another. **This function does not work with different types and/or brands of DMX controller. Trying so may permanently damage your DMX console memory.**

NOTE: For this function, you will need a standard XLR-XLR cable. Connect the output from the source unit to the input of the destination unit.

NOTE: The XLR input and output are not suitable for any other kind of data transmission. An exception is the DMX output, which sends a DMX-signal to your DMX devices.

Source unit:
- Turn the unit off, press and hold Scanner buttons 2 and 3, plus Scene button 1, then turn on the controller

Destination unit:
- Turn the unit off, press and hold Scanner buttons 8 and 9, plus Scene button 2, then turn on the controller

Both units are now ready to transfer and receive data. Press Scene buttons 7 and 8 simultaneously on the Source device to start transmitting.

NOTE: The display should show TRANSMIT for the transmitting unit, and RECEIVE for the receiving unit.

Practical options and information

DMX:
DMX is a protocol with 512 channels. Each channel may contain a value between 0 and 255 (256 values).

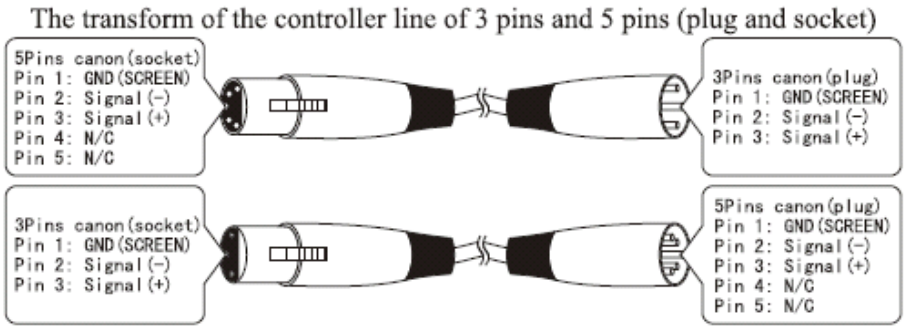
A lighting fixture ‘listens’ to certain channels by setting the correct DMX starting address. From that position, the unit will listen to that particular channel and if needed, also the following channels.

For example, a 6-channel device, with a starting address of 22, will ‘listen’ to channel 22 – 27. Starting addresses can be chosen in any particular order of connected fixtures. Also the order of the connected fixtures is not important.

DMX-controlled devices can be daisy-chained using XLR-XLR cables. AYRA recommends the use of 110 Ohm DMX cables and a DMX terminator **(110 Ohm, see below)** at the end of a DMX chain.

DMX terminators can be purchased at your local dealer, or you can make them yourself if you have the right technical abilities and tools.

The DMX connections of the Sunny 512 are equipped with 3-pin XLR outputs. It might be possible that you have certain DMX devices that only support 5-pin XLR in- and outputs. In that case, you need to make or purchase adapter cables, which transform the 3-pin connectors to 5-pin connectors.



DMX Display quick reference chart

DMX Address Quick Reference Chart																					
Dip Switch Position																					
DMX DIP SWITCH SET 0=OFF 1=ON X=OFF or ON					#9	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
					#8	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
					#7	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
					#6	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1
#1	#2	#3	#4	#5																	
0	0	0	0	0			32	64	96	128	160	192	224	256	288	320	352	384	416	448	480
1	0	0	0	0		1	33	65	97	129	161	193	225	257	289	321	353	385	417	449	481
0	1	0	0	0		2	34	66	98	130	162	194	226	258	290	322	354	386	418	450	482
1	1	0	0	0		3	35	67	99	131	163	195	227	259	291	323	355	387	419	451	483
0	0	1	0	0		4	36	68	100	132	164	196	228	260	292	324	356	388	420	452	484
1	0	1	0	0		5	37	69	101	133	165	197	229	261	293	325	357	389	421	453	485
0	1	1	0	0		6	38	70	102	134	166	198	230	262	294	326	358	390	422	454	486
1	1	1	0	0		7	39	71	103	135	167	199	231	263	295	327	359	391	423	455	487
0	0	0	1	0		8	40	72	104	136	168	200	232	264	296	328	360	392	424	456	488
1	0	0	1	0		9	41	73	105	137	169	201	233	265	297	329	361	393	425	457	489
0	1	0	1	0		10	42	74	106	138	170	202	234	266	298	330	362	394	426	458	490
1	1	0	1	0		11	43	75	107	139	171	203	235	267	299	331	363	395	427	459	491
0	0	1	1	0		12	44	76	108	140	172	204	236	268	300	332	364	396	428	460	492
1	0	1	1	0		13	45	77	109	141	173	205	237	269	301	333	365	397	429	461	493
0	1	1	1	0		14	46	78	110	142	174	206	238	270	302	334	366	398	430	462	494
1	1	1	1	0		15	47	79	111	143	175	207	239	271	303	335	367	399	431	463	495
0	0	0	0	1		16	48	80	112	144	176	208	240	272	304	336	368	400	432	464	496
1	0	0	0	1		17	49	81	113	145	177	209	241	273	305	337	369	401	433	465	497
0	1	0	0	1		18	50	82	114	146	178	210	242	274	306	338	370	402	434	466	498
1	1	0	0	1		19	51	83	115	147	179	211	243	275	307	339	371	403	435	467	499
0	0	1	0	1		20	52	84	116	148	180	212	244	276	308	340	372	404	436	468	500
1	0	1	0	1		21	53	85	117	149	181	213	245	277	309	341	373	405	437	469	501
0	1	1	0	1		22	54	86	118	150	182	214	246	278	310	342	374	406	438	470	502
1	1	1	0	1		23	55	87	119	151	183	215	247	279	311	343	375	407	439	471	503
0	0	0	1	1		24	56	88	120	152	184	216	248	280	312	344	376	408	440	472	504
1	0	0	1	1		25	57	89	121	153	185	217	249	281	313	345	377	409	441	473	505
0	1	0	1	1		26	58	90	122	154	186	218	250	282	314	346	378	410	442	474	506
1	1	0	1	1		27	59	91	123	155	187	219	251	283	315	347	379	411	443	475	507
0	0	1	1	1		28	60	92	124	156	188	220	252	284	316	348	380	412	444	476	508
1	0	1	1	1		29	61	93	125	157	189	221	253	285	317	349	381	413	445	477	509
0	1	1	1	1		30	62	94	126	158	190	222	254	286	318	350	382	414	446	478	510
1	1	1	1	1		31	63	95	127	159	191	223	255	287	319	351	383	415	447	479	511

Dip Switch Position

DMX Address

Technical specifications

Type: OSO 240B MKII

DMX output channels: 192
Storage capacity: 240 scenes (8 scene x 30 storage banks)
Chases: 6
Fixtures: 12 (with 16 channels each)
Faders: 8 (16 total, switchable with Page A/B function)
Joystick for pan/tilt (X/Y) movement
Speed and fade time fader
Music activated: 6.35mm jack line audio source or internal mic

Power operating range: 9V -12V DC, 500mA min.

Maximum ambient temperature: 45 degrees Celsius

Data input: locking 3-pin XLR male socket
Data output: locking 3-pin XLR male socket

DMX-output trough Data XLR output connector

Pin configuration:
Pin 1: Shield
Pin 2: Data -
Pin 3: Data +

Protocol: DMX-512/1990 USITT

Dimensions: 482 x 133 x 80 mm
19 inch rack mountable, 3U

Weight: 2.8 kg